

**SYSTEM AND METHOD FOR SIMULTANEOUSLY MEASURING
THIN FILM LAYER THICKNESS, REFLECTIVITY, ROUGHNESS,
SURFACE PROFILE AND MAGNETIC PATTERN ON THIN FILM MAGNETIC
DISKS AND SILICON WAFERS**

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ABSTRACT OF THE DISCLOSURE

A system and method for performing a magnetic imaging, optical profiling, and measuring lubricant thickness and degradation, carbon wear, carbon thickness, and surface 10 roughness of thin film magnetic disks and silicon wafers at angles that are not substantially Brewster's angle of the thin film (carbon) protective overcoat is provided. The system and method involve a focused optical light whose polarization can be switched between P or S polarization is incident at an angle to the surface of the thin film magnetic disk. This generates both reflected and scattered light that may be measured to determine various values and 15 properties related to the surface of the disk, including identifying the Kerr-effect in reflected light for determination of point magnetic properties. In addition, the present invention can mark the position of an identified defect.